Communicating the Gynecologic Brachytherapy Experience (CoGBE): Perceived Benefits of a Graphic Narrative Patient Education Tool

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Purpose

- Radiotherapy is unfamiliar, complex, and anxiety inducing for patients[1,2]
- High dose rate gynecologic brachytherapy is particularly involved and invasive[2]
- Patient-centered care is essential to improve the patient experience, but current patient education materials do not meet readability standards, impairing access for those with low health literacy (10th grade vs goal 5-6th grade)[3,4]
- Communicating the External Beam Radiation Experience (CEBRE) was evaluated favorably by both clinicians and patients[5]

Specific Aims

- **Develop an accessible and adaptable education tool to be used in patient consultations in a variety of settings and geographic locations**
- **Assess the perceived clinical benefit, usability, and anxiety-reduction capacity of the three modality-specific versions of CoGBE**

Methods

DESIGN:
- Collaboration between radiation oncologists and designers
- Conducted patient, family, and clinician interviews
- Follows the story of Jane, undergoing HDR brachytherapy

STUDY DESIGN & ANALYSIS
- Survey to the American Brachytherapy Society
- Systems Usability Scale and Modified Anxiety Index
- Total response rate: 6.6% (44/663); completion rate: 74.5% (survey opens)
- Likert-type scores are reported as median [interquartile range]
- Modified grounded theory for free response analysis (Krippendorff's alpha intercoder reliability score = 0.836)

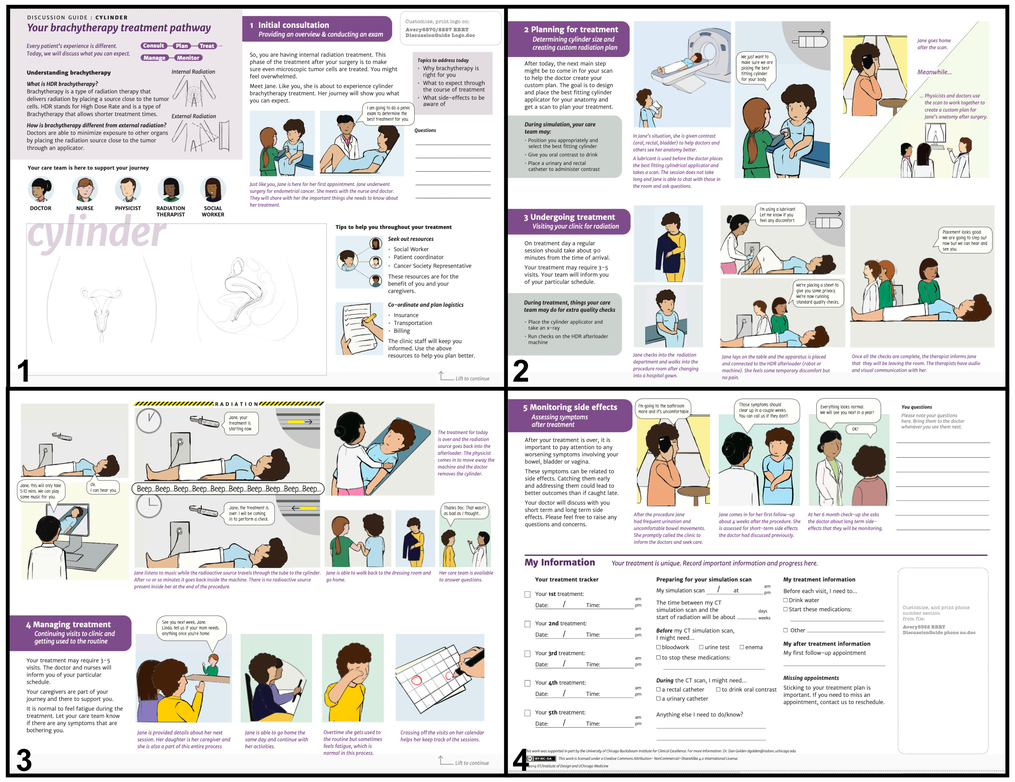

Figure 1. Sequential pages of the cylinder version of CoGBE, illustrating the features of graphic narrative centered around a hypothetical patient's experience

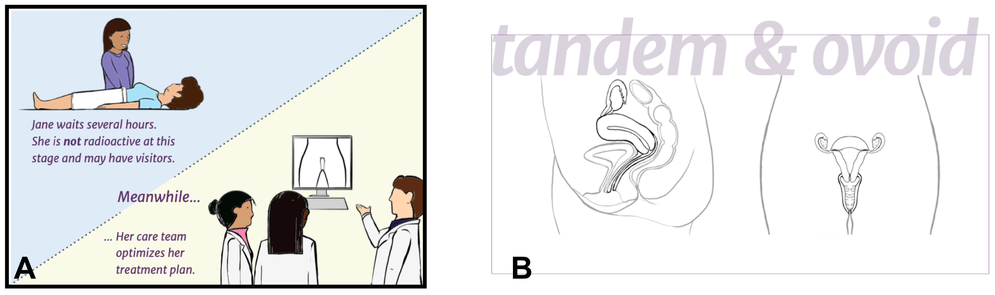

Figure 2. A) Highlights of graphic narrative detail and B) "Doctor's Sketchpad" used to actively tailor CoGBE in clinic for each individual patient.

Results

- 73% rated as "quite" or "extremely" **helpful**
- 77% reported patients would **understand** "more" or "a lot more" after consultation
- 82% reported at least moderately helpful in making **consultation more memorable**
- **80% reported at least moderate likelihood of using in clinic**
- No differences between CoGBE versions (cylinder, intracavitary, interstitial)

Salient Qualitative Themes

Positive Domains:
- Relatability
- Personalization
- Illustrations (graphic narrative)

Negative Domains
- Generalizability
- Illustrations (character affect)

Results

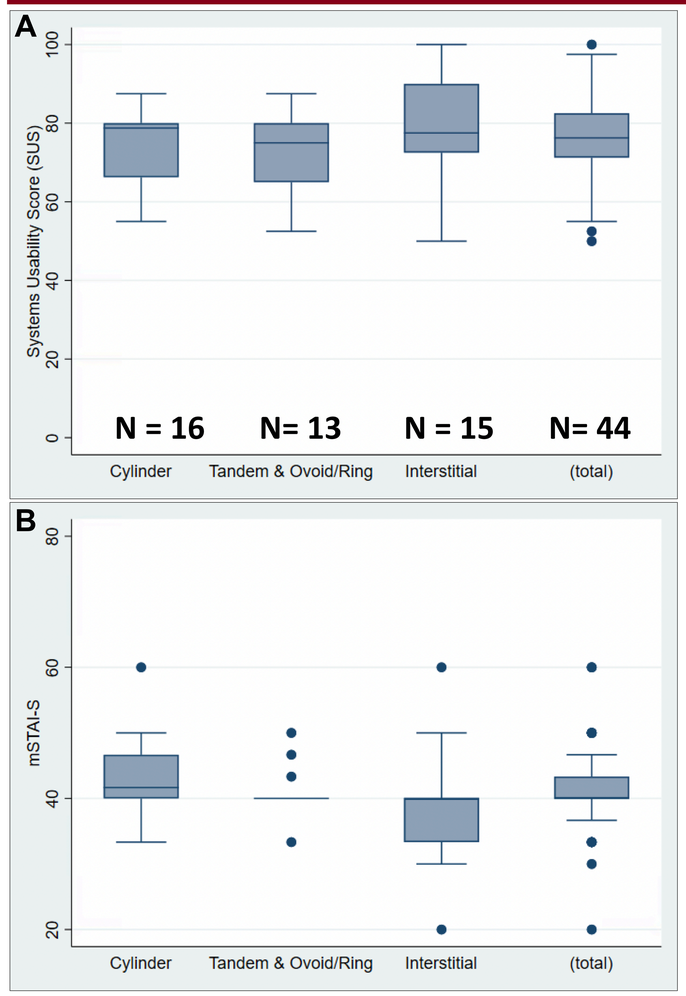

Figure 3. Distributions of A) systems useability scores and B) modified anxiety index scores for each guide type and in aggregate. Boxes represent the median and interquartile range (IQR); the lower and upper box limits represent the 25th and 75th percentile. Medians are represented by the line across the box. The upper and lower whiskers extend to the greatest and lowest datum within 1.5 × IQR above and below the upper and lower quartile. Data points outside of this range are defined as outliers and are displayed as dots.

Systems Usability Score (SUS)

- Higher scores indicate greater usability
- >85.5 has excellent usability
- >71.4 has good usability
- No inter-group differences

Modified Anxiety Index (mSTAI)

- Calculated on a scale of 20 to 80
- Higher scores indicate greater levels of anxiety
- >40 is considered a clinically relevant state of anxiety

Conclusion

- **The CoGBE guide has clinical utility, is usable, and may reduce patient anxiety**
- The interstitial guide has the greatest impact on anxiety
- CoGBE warrants further investigation with other radiotherapy stakeholders (e.g. patients)
- Translations of CoGBE will allow global applicability and use with non-English-speaking patients, especially in low-resource settings with high cervical cancer burdens

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